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| 10/599,754 | 10/06/2006 | Thomas Gruber-Nadlinger | P30681 | 3764 |

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| EXAMINER | |
|---|---|
| BESLER, CHRISTOPHER JAMES | |
| ART UNIT | PAPER NUMBER |
| 3726 | |

| NOTIFICATION DATE | DELIVERY MODE |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/599,754 | GRUBER-NADLINGER ET AL. | |
| | Examiner | Art Unit | |
| | CHRISTOPHER BESLER | 3726 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *16 August 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Objections*

1. Claim 23 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 23 includes the sole limitation of a machine for producing and/or refining a paper web, cardboard web, tissue web or some other fiber web. This same limitation can be found in the preamble of independent claim 19, to which claim 23 is dependent thereon.

### *Claim Rejections - 35 USC § 103*

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1 – 16 and 19 – 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyoshi (U.S. Patent Number 5,887,644) in view of Miller (U.S. Patent Number 4,781,795).

4. As to claim 1, Akiyoshi teaches a heated cylinder (abstract) comprising: a cylinder sleeve (figure 1, element 18) having at least one inner sleeve layer (figure 1, element 19; column 4, lines 30 – 36) and one outer sleeve layer (figure 1, element 20; column 4, lines 30 – 36), wherein the at least one inner sleeve layer and one outer sleeve layer are separated from each other by a hollow space into which a fluid is

introduced (figure 1, elements 30, 31, 25, 34, and 33; column 5, lines 11 – 20). However, while Akiyoshi teaches a fluid being introduced into the hollow space, Akiyoshi teaches that such fluid is a cooling fluid (column 5, lines 11 – 20), rather than a hot fluid. Miller teaches a heated cylinder (abstract) comprising: a cylinder sleeve (figure 45, element 350; column 16, lines 65 – 68) having at least one inner sleeve layer (figure 45, element 351; column 16, line 65 – column 17, line 1) and one outer sleeve layer (figure 45, element 352; column 16, line 65 – column 17, line 1), wherein the at least one inner sleeve layer and one outer sleeve layer are separated from each other by a hollow space into which a fluid is introduced (figures 45 and 46, element 353 and 355; column 16, line 65 – column 17, line 10). Specifically, Miller teaches the fluid being a hot fluid (column 16, lines 62 – 64). It would have been obvious to one skilled in the art to substitute the cooling fluid of Akiyoshi, for the heated fluid of Miller, to obtain a cylinder that is designed to heat a given object, rather than cool the given object.

5. As to claim 2, Akiyoshi clearly illustrates the inner sleeve layer being thicker than the outer sleeve layer (figure 1, elements 19 and 20).

6. As to claim 3, Akiyoshi does not teach the thickness of the outer sleeve layer. However, it would have been obvious to one skilled in the art, as a matter of design choice, to set the wall thickness of the outer sleeve layer to a value from 8 to 15 mm.

7. As to claim 4, while Akiyoshi teaches the fluid being water (column 5, lines 10 – 15), the cylinder of Akiyoshi is capable of utilizing steam. Furthermore, Akiyoshi inherently teaches the fluid having a positive pressure. This is because Akiyoshi teaches the fluid flowing through the passages of the cylinder (figure 1, elements 29, 28,

30, 31, 25, 34, 33, and 32; column 5, lines 10 - 20). However, Akiyoshi does not teach the level of pressure of the fluid. It would have been obvious to one skilled in the art, as a matter of design choice, to set the pressure of the fluid to a value between 2 and 13 bar.

8. As to claim 5, Akiyoshi further teaches the cylinder having a rib structure extending in an axial direction (figure 2, element 24; column 4, lines 44 - 48), and wherein the ribs are formed on to the inner surface of the outer sleeve layer facing the hollow space (figure 2, element 24; column 4, lines 44 - 48).

9. As to claim 6, Akiyoshi teaches the rib structure comprising of a material having a high thermal conductivity (column 4, lines 32 – 34). Note that Akiyoshi teaches the ribs being formed from the outer sleeve (figure 2, elements 20 and 24; column 5, lines 25 – 26).

10. As to claim 7, Akiyoshi does not teach the surface area of the ribs. However, because the ribs act as a heat exchanger (column 5, lines 33 – 36), it would have been obvious for the surface area of the ribs to be much higher than that of the inner surface of the outer sleeve. Furthermore, it would have been obvious, as a matter of design choice, to set the surface area of the ribs to a value of 10 to 100 times greater than that of the inner surface of the outer sleeve layer.

11. As to claim 8, Akiyoshi teaches the outer sleeve layer comprising of a material having a high thermal conductivity (column 4, lines 32 – 34).

12. As to claim 9, Akiyoshi teaches the outer sleeve layer comprising of a copper alloy, so that it has a high thermal conductivity (column 4, 31 - 36). However, it would

have been obvious to one skilled in the art, to replace the copper alloy, taught by Akiyoshi, with boiler steel, so as to obtain the same high thermal conductivity at a lower cost.

13. As to claim 10, Akiyoshi teaches the inner sleeve layer being formed from stainless steel (column 4, lines 30 – 32), which is known to have a generally high modulus of elasticity.

14. As to claim 11, Akiyoshi further teaches pipes which are located between the inner and outer sleeve layers (figure 1, elements 28 and 25) and also being connected to a fluid supply and exhaust tank (figure 1, elements 29 and 32; column 4, lines 60 – 65 and column 5, lines 4 - 10), via a rotatable bushing (figure 1, element 22; column 4, lines 35 - 39).

15. As to claim 12, the inner sleeve of Akiyoshi comprises of a rigid core (figure 2, element 19) which, through the load bearing members, absorb loads acting on the outer sleeve layer (figure 2, element 23; column 4, lines 52 - 59).

16. As to claim 13, Akiyoshi teaches the inner and outer sleeve layers being connect by a plurality of bars (figure 2, element 23; column 4, lines 40 - 44).

17. As to claim 14, Akiyoshi teaches platelets being attached between the inner and the outer sleeve layers (figure 2, element 24; column 4, lines 44 – 47).

18. As to claim 15, Akiyoshi illustrates the platelets being arranged parallel to one another (figures 1 and 2, element 24). Note that this can be found because Akiyoshi illustrates the platelets being arranged parallel to the longitudinal axis of the cylinder.

19. As to claim 16, Akiyoshi teaches the platelets having a flat surface (figure 2, element 24).

20. As to claim 19, Akiyoshi teaches a heated cylinder capable of producing and refining a paper web, cardboard web, tissue web or some other fiber web (abstract) comprising, one outer cylinder sleeve (figures 1 and 2, element 20; column 4, lines 30 - 36); a fluid introduced into the one outer cylinder sleeve to flow along an inner surface of the one outer cylinder sleeve (figure 1, elements 30, 31, 25, 34, and 33; column 5, lines 11 – 20); and struts located inside the heated cylinder that are arranged to support the outer cylinder sleeve (figure 2, element 23; column 4, lines 40 – 44). However, while Akiyoshi teaches a fluid being introduced into the outer cylinder sleeve, Akiyoshi teaches that such fluid is a cooling fluid (column 5, lines 11 – 20), rather than a hot fluid. Miller teaches a heated cylinder capable of producing and refining a paper web, cardboard web, tissue web or some other fiber web (abstract), comprising: one outer cylinder sleeve (figure 45, element 352; column 16, line 65 – column 17, line 1) and a fluid introduced into the one outer cylinder sleeve to flow along an inner surface of the one outer cylinder sleeve (figures 45 and 46, element 353 and 355; column 16, line 65 – column 17, line 10). Specifically, Miller teaches the fluid being a hot fluid (column 16, lines 62 – 64). It would have been obvious to one skilled in the art to substitute the cooling fluid of Akiyoshi, for the heated fluid of Miller, to obtain a cylinder that is designed to heat a given object, rather than cool the given object.

21. As to claim 20, Akiyoshi teaches the material having high thermal conductivity is a copper alloy (column 4, lines 31 – 36).

22. As to claim 21, Akiyoshi illustrates the platelets being arranged in an axial direction of the cylinder (figure 2, element 24; column 4, lines 44 – 46).

23. As to claim 22, the cylinder of claim 1 is capable of producing or refining a paper web, cardboard web, tissue web, or other fiber web.

24. As to claim 23, the cylinder of claim 19 is capable of producing or refining a paper web, cardboard web, tissue web, or other fiber web.

25. As to claim 24, Miller teaches a hot fluid flowing between the at least one inner sleeve layer and the outer sleeve layer (figures 45 and 46, elements 351 and 352; column 16, line 62 – column 17, line 10), such hot fluid flow would inherently cause heat to be radiated outwardly from the cylinder.

26. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyoshi in view of Miller as applied to claim 14 above, and further in view of Hollingsworth (U.S. Patent Number 5,920,961).

27. As to claim 17, Akiyoshi does not teach the platelets becoming wider in the direction of the outer sleeve layer. Hollingsworth teaches a heated cylinder with heat dissipation means (column 1, lines 55 – 56) comprising of an outer sleeve layer (figure 3, element 10a; column 3, lines 47 – 48) and a plurality of platelets attached to the inside surface of the outer sleeve layer (figure 3, element 40; column 3, lines 49 – 53). Hollingsworth further illustrates the platelets becoming wider in the direction of the outer sleeve layer (figure 3, element 40). It would have been obvious to form the platelets of Akiyoshi in the shape taught by Hollingsworth because Hollingsworth teaches that such a shape acts to increase the amount of heat transfer by the platelets (column 3, lines 57

- 61) and Akiyoshi teaches that the purpose of the platelets is to transfer heat (column 5, lines 33 - 36).

28. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyoshi in view of Miller as applied to claim 5 above, and further in view of Watson (U.S. Patent Number 5,983,993).

29. As to claim 18, Akiyoshi does not teach the width of the ribs becoming thinner as it approaches the outer sleeve layer. Watson teaches a heated cylinder with heat dissipation means (abstract) comprising of an outer sleeve layer and an inner sleeve layer (figure 4, elements 20 and 40; column 3, lines 54 – 56). Watson further teaches the outer sleeve layer comprising a rib structure wherein at least one of ribs extend in an axial direction and are formed on the inner surface of the outer sleeve layer facing a hollow space between the inner and outer sleeve layer (figures 4 and 13, element 25; column 3, lines 6 – 10). Watson also teaches the width of the ribs becoming thinner as they reach the outer sleeve layer as compared to a middle region between the end faces (figure 13, element 25; column 3, lines 46 - 53). It would have been obvious to form the ribs of Akiyoshi in the shape of Watson so as to increase the surface area of the ribs, thereby increasing the amount of heat transfer by the cylinder.

***Response to Arguments***

30. Applicant's arguments with respect to claims 1 – 24 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

31. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER BESLER whose telephone number is (571)270-5331. The examiner can normally be reached on 7:30 - 5:00, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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